

November 11, 1958

Mr. R. M. Bissell, Jr.



Dear Dick:

As you have observed in recent technical review meetings at our covert facility, and in special briefings for various reviewing agencies, the Sentry Corona program development is reasonably well on schedule. At this time all major engineering is released and production is well under way. In addition, facilities for checkout and launch operations, together with the detailed operation plans and selection of operation crews, are fairly well established. This somewhat comfortable position was obtained through hard work by all personnel and a large expenditure of premium time during the program's short life. The milestones are recalled as follows:

|  |          |
|--|----------|
| Cancellation of spin stabilized recon. pod | 18 April |
| Selection of contractors                   | 25 April |
| Start of Systems Design                    | 28 April |
| Completion of systems design, first review | 14 May   |
| Design freeze                              | 26 July  |
| Major engineering design release           | 23 Oct.  |

The present design was selected from a number of possibilities to be the best design obtainable during the period allowed, but with the restriction of employing existing techniques or simple extensions of the state-of-the-art. Your own stated policy of seeking reliability through simple design rather than striving for the last few percentage points in perfection of product has been a major factor in the present design.

Review of the present project indicates that logical consideration for an immediate follow-on should provide the maximum possible period of time for systems analysis and design, engineering design, fabrication, and test. The systems design approach would not be to invent a new system since this would not benefit from the reliability obtained from the current program. Instead such design would be aimed toward product improvement by modification of the present system.

A summary of areas of potential product improvement which require study include:

A. Increased resolution

1. Application of Microfile film, with
2. Increased lens aperture.

3. Improved IMC.
4. Improved temperature control of critical camera elements through electrical power dissipation.
5. Installation of camera yaw bias to compensate for earths rotation.
6. Extending coverage to winter months.

B. Vehicle performance

1. Extend life to 2 to 3 days operation and provide for selective firing angles through a detailed weight reduction program.
2. Improve vehicle stabilization.
3. Reduce telemetry.

C. Recovery operation

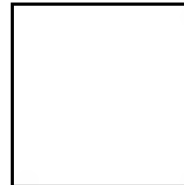
1. Employ inherently stable retro-system, or
2. Employ retro-system autopilot.
3. Provide improved tracking accuracy and data smoothing.
4. Provide improved reentry timing accuracy.
5. Provide precise recovery area wind prediction.
6. Provide for land recovery in remote area of southwest USA.

A proposal for Corona II, summarized in Fig. 1, calls for Sixteen Thor boosted recovery-recon. firings during appropriate months of CY 1960. Time spans for systems design, detail engineering, first model manufacturing and equipment qualification are laid out. This schedule, which is considered to represent minimum times for each function, shows that systems study and design should start in December of this year in order to provide you with a detailed analysis report and recommendation for Corona II systems design by March 1, 1959.

Discussion with ITEK along these general lines plus some preliminary planning here at LMSD establishes the scope of the five month study as follows:

- A. Camera studies (at ITEK)  
B. Vehicle studies  
C. Recovery studies

Total

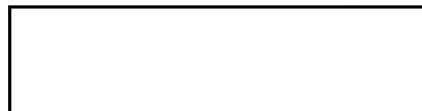


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I am looking forward to your visit next week and the opportunity of discussing this matter with you.

Yours truly,

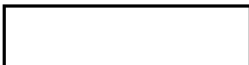
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CORONA DEVELOPMENT SCHEDULE

Dept. 68-25 Date 11/10/58 SP-133  
Prepared by JEF

|                           |  |  |  |  |  |  |  |  |  |  |  | 1958 |   | 1959 |   |   |   |   |   |   |   |   |   |   |   | 1960 |   |   |   |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |
|---------------------------|--|--|--|--|--|--|--|--|--|--|--|------|---|------|---|---|---|---|---|---|---|---|---|---|---|------|---|---|---|---|---|---|---|---|---|---|---|--|--|--|--|--|--|--|--|--|--|--|--|--|
|                           |  |  |  |  |  |  |  |  |  |  |  | N    | D | J    | F | M | A | M | J | J | A | S | O | N | D | J    | F | M | A | M | J | J | A | S | O | N | D |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <u>Present</u>            |  |  |  |  |  |  |  |  |  |  |  |      |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Corona I                  |  |  |  |  |  |  |  |  |  |  |  |      |   |      |   |   |   |   | 2 |   | 2 | 1 | 2 | 1 | 2 | 2    |   |   |   |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bio Med                   |  |  |  |  |  |  |  |  |  |  |  |      |   |      |   |   |   |   | 1 | 1 |   |   | 1 |   | 1 |      | 1 |   |   |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |
| <u>Proposed</u>           |  |  |  |  |  |  |  |  |  |  |  |      |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Corona II                 |  |  |  |  |  |  |  |  |  |  |  |      |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Systems Study & Design    |  |  |  |  |  |  |  |  |  |  |  |      |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Detailed Analysis Report  |  |  |  |  |  |  |  |  |  |  |  |      |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Detail Engineering        |  |  |  |  |  |  |  |  |  |  |  |      |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Development Model         |  |  |  |  |  |  |  |  |  |  |  |      |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Manufacturing             |  |  |  |  |  |  |  |  |  |  |  |      |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Qualification             |  |  |  |  |  |  |  |  |  |  |  |      |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Delivery Subassy. 1253D   |  |  |  |  |  |  |  |  |  |  |  |      |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Sentry System & Preflight |  |  |  |  |  |  |  |  |  |  |  |      |   |      |   |   |   |   |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |  |  |  |  |  |  |  |  |  |  |  |  |  |

**SECRET**

Flight Schedules

| <u>System</u> | <u>Dates</u>                                 | <u>Remarks</u>   |
|---------------|--|--|
| CORONA        | Each month thru 1960                         | Increased payload (40#) to start by June 1960<br>14 total flights 1960 |
| ARGON         | July, August, and September 1960             | Total of 4 flights   |
| E-1           | September and November 1960 and January 1961 | Proves E-2 only<br>No results  |
| E-3           |  | No schedule  |
| E-5           | August 1961                                  | No additional data   |

**SECRET**